



Pete Ricketts, Governor

REF: NE00628

Dear Dam Owner,

As required by State Law, an inspection of your dam has been completed by the Nebraska Department of Natural Resources (NeDNR). NeDNR conducts periodic inspections of more than 2,800 dams statewide as required by *Neb. Rev. Stat. § 46-1664* to protect downstream life and property from dam failures.

Enclosed is a copy of the *Dam Inspection Checklist* and *Photo Log* completed after the inspection along with a booklet, *Inspection and Maintenance of Your Earthen Dam*. As explained below, you can use the completed *Dam Inspection Checklist* and booklet to better understand and improve the condition of your dam:

1. If problems were found during the inspection, a blue check mark, ✓, will appear on the left hand side of the *Dam Inspection Checklist* under *Deficiency Requiring Attention*.
2. If you have a blue check mark, ✓, you can find information on how to address the problem in the provided booklet, *Inspection and Maintenance of Your Earthen Dam*. On the *Dam Inspection Checklist*, the number on the line next to the blue check mark, ✓, corresponds to the section on pages 6 through 16 of the booklet.
3. After completing the inspection and reviewing available records for your dam, an overall condition assessment was made. The condition assessment for your dam can be found near the bottom of the *Dam Inspection Checklist*. The four possible condition assessments are satisfactory, fair, poor, and unsatisfactory.

If you have any questions about the inspection, the inspection checklist, or how to improve the condition of your dam, please contact the NeDNR's Dam Safety Section at 402-471-2363.

Sincerely,

Mark Noble  
Dam Safety Engineer

Gordon W. "Jeff" Fassett, P.E., Director

**Department of Natural Resources**

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[dnr.nebraska.gov](http://dnr.nebraska.gov)



NEBRASKA DEPARTMENT OF NATURAL RESOURCES  
DAM INSPECTION CHECKLIST

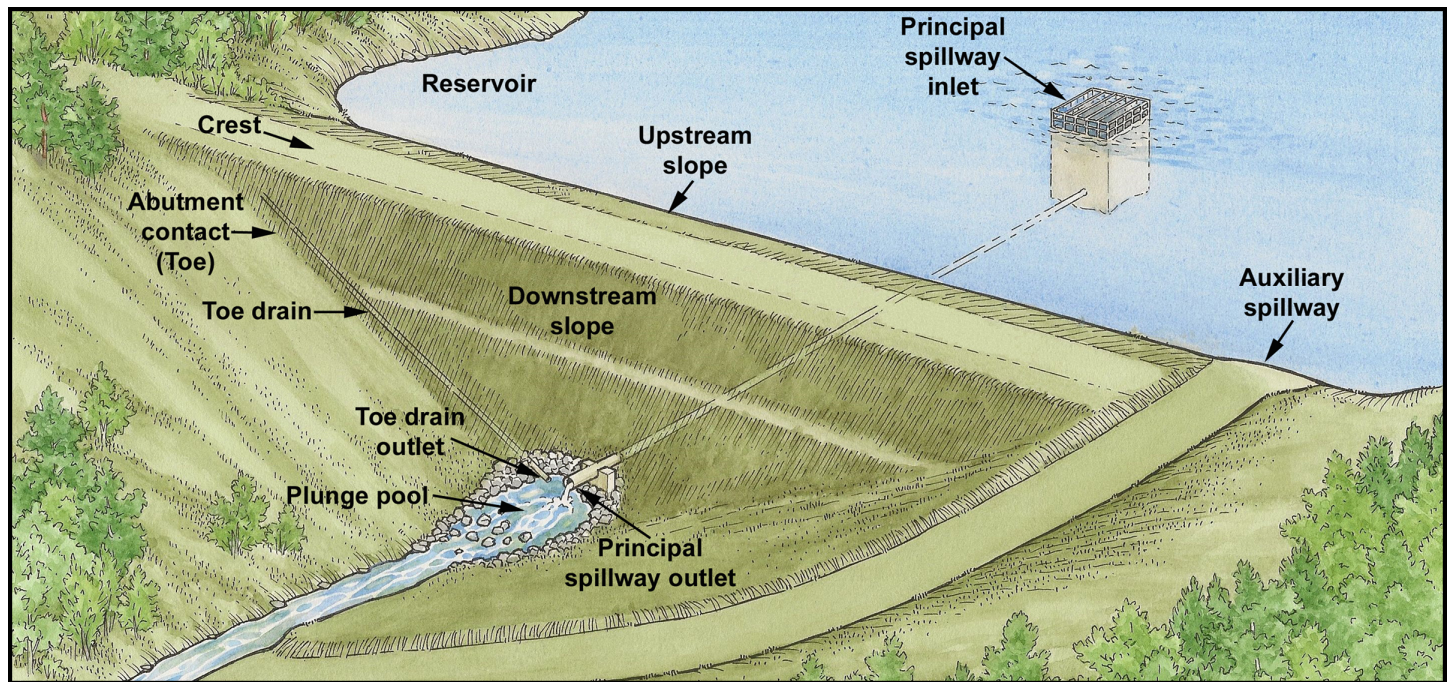
DAM NAME: <b>SPENCER DAM</b>	NID #: <b>NE00628</b> PLAN #: <b>P-3650G</b> APP #: <b>A-1725</b> DAM APPROVAL STATUS: <b>Approved</b>
PRIMARY OWNER: Nebraska Public Power District - Spencer 89566 492 Ave Spencer, NE 68777	LOCATION: QRT: <b>NW</b> SEC: <b>30</b> TWP: <b>33</b> RGE: <b>11 W</b> COUNTY: <b>Holt</b> STREAM: <b>NIOBRARA RIVER</b> HAZARD CLASS: <b>Significant</b> YEAR COMPLETED: <b>1927</b> HYDRAULIC CAPACITY: <b>Adequate</b>
ADDITIONAL OWNERS: Nebraska Public Power District	DAM HEIGHT: <b>29 feet</b> DRAINAGE AREA: <b>7084800 acres</b> MAX STORAGE: <b>16487 acre-ft</b> DAM TYPE: <b>RE - Earthfill</b> NORMAL STORAGE: <b>5306 acre-ft</b> DAM LENGTH: <b>3700 ft</b> INSPECTED BY: <b>Stacey Kolar &amp; Jeremy Sedlacek</b> INSPECTED: <b>4/24/2018</b> REVIEWED BY: <b>Mark Noble</b>

Deficiency Requiring Attention	General Conditions	Remarks (References to 'left' or 'right' are made as if facing downstream)
	1. Recent High Water Marks	
	2. Downstream Development	<i>The dam is about 1600 feet upstream (west) of U.S. Highway 281</i>
	3. Inadequate Vegetative Cover	
	4. Alterations to Dam	<i>A toe drain was constructed along the downstream toe in 2015</i>
	<b>Crest</b>	
	5. Settlements or Cracks	
	6. Erosion	
	7. Trees	
	8. Rodent Holes	
	<b>Upstream Slope</b>	
	9. Settlements, Slides, or Cracks	
	10. Erosion	
	11. Trees	
	12. Rodent Holes	
	<b>Principal Spillway Inlet</b>	Water Surface EL: <i>3 feet below top of tainter gates and stop logs</i> Est Flow Rate: <i>2000 cfs</i> Size and Type: <i>Concrete spwy with 4 tainter gate bays &amp; 5 bays of stop logs</i> Drawdown: <i>no drawdown</i>
✓	13. Spalling, Cracking, or Scaling	<i>Floor of concrete spwy is worn with exposed rebar. Dissipators worn down to same elev as spwy floor.</i>
	14. Leakage	
	15. Inadequate Trash Rack	
	16. Obstructions	
	<b>Auxiliary Spillway</b>	Type and Location: <i>there is no auxiliary spillway</i>
	17. Obstructions	
	18. Erosion	
	19. Rodent Holes	
	20. Vegetation Condition Inadequate	
	<b>Downstream Slope</b>	
	21. Settlements, Slides, or Cracks	
	22. Erosion	
	23. Trees	
✓	24. Rodent Holes	<i>one found</i>
	25. Problems at Drain or Well Outlet	<i>Toe drains running water, but appear to need routine cleaning.</i> Est.Flow Rate:
✓	26. Seepage or Boils	<i>Wet area just d/s of dam, just N of north service road at toe of slope</i> Est.Flow Rate:
	<b>Principal Spillway Outlet</b>	Size and Type: <i>See comments for Principal Spillway Inlet</i> Est.Flow Rate: <i>2000 cfs</i>
✓	27. Spalling, Cracking, or Scaling	<i>See comments for Principal Spillway Inlet</i>
	28. Leakage	
	29. Obstruction	
	30. Erosion	
	<b>Plunge Pool/Stilling Basin</b>	
	31. Concrete or Riprap Deterioration	
	32. Outlet Channel Obstruction	
	33. Erosion	

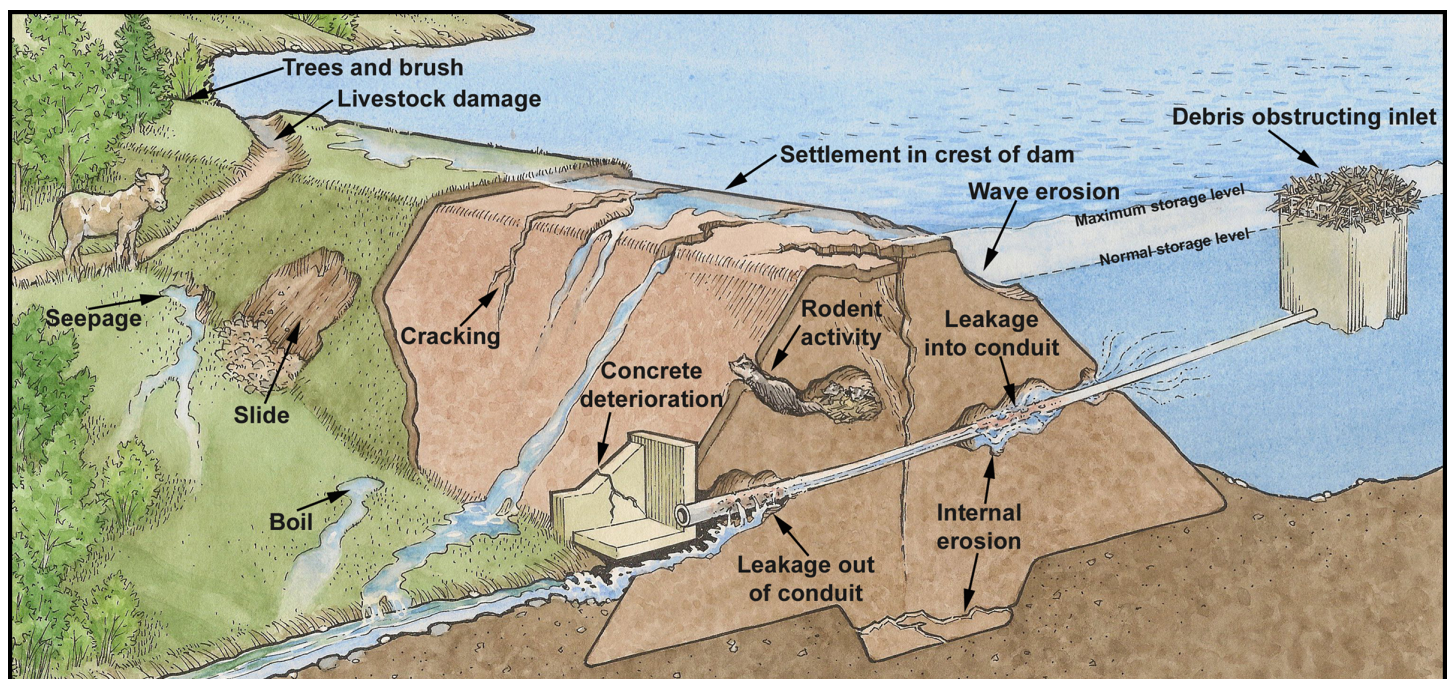
Condition Assessment:	<i>Fair - Deficiencies exist which could lead to dam failure during rare, extreme storm events.</i>
Additional Comments:	<i>The angle iron frame on the 3rd gate in from the northernmost gate appears to be bent.</i>



## Typical Dam Configuration in Nebraska



## Common Problems at Dams in Nebraska



The findings contained in this report were based on a visual inspection of the dam and a review of available records. A more in-depth evaluation or investigation may reveal additional deficiencies that were not discovered during this inspection. The Department of Natural Resources inspects dams in accordance with the Safety of Dams and Reservoirs Act in order to protect downstream life and property from dam failures (Neb. Rev. Stat. §§46-1635 and 46-1664). Before constructing, reconstructing, enlarging, altering, breaching, removing, or abandoning a dam in Nebraska, the dam owner is required to obtain the approval of the Department (Neb. Rev. Stat. §46-1646). Every owner of a dam subject to the Safety of Dams and Reservoirs Act and not previously approved by the Department is required to file plans for the dam with an application (Neb. Rev. Stat. §46-1670). A storage permit is required if the dam has a normal storage capacity of 15 acre-feet or more below the lowest open overflow, or if the water in the reservoir will be pumped or released for a beneficial purpose (Neb. Rev. Stat. §46-241). Inspection of the dam and the issuance of this inspection report in accordance with Neb. Rev. Stat. §46-1664, in no way changes the approval status of a dam. If you have questions regarding the approval status of your dam, the approval process, or the need for a storage permit, please contact the Department of Natural Resources at 402-471-2363.



Top of Dam



Upstream Slope



Downstream Slope



Principal Spillway Inlet





Principal Spillway Outlet



Example of toe drain flow.



Example of deteriorating concrete.



Bent framework on gate.

